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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/560,105	04/28/2000	Ulf Ahlfors	3964-10 (6563-50462)	4173

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EXAMINER	
FOX, JAMAL A	

ART UNIT	PAPER NUMBER
2664	

DATE MAILED: 03/25/2004

10

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/560,105	AHLFORS ET AL.	
	Examiner	Art Unit	
	Jamal A Fox	2664	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 January 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-52* is/are pending in the application.

4a) Of the above claim(s) *5,15,31 and 41* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,9-13,19-22,27,35-39 and 45-48* is/are rejected.

7)☒ Claim(s) *2-4,6-8,14,16-18,23-26,28-30,32-34,40,42-44 and 49-52* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *28 April 2000* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to because *–Figures 1 and 2 should be provided with descriptive text labels--*. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1, 9-13, 19-22, 27, 35-39 and 45-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Robins et al. (U.S. Patent No. 6,430,184).

Referring to claim 1, Robins et al. discloses a method of managing packet (packet, col. 2 lines 25-30) queues (queue, Fig. 5, Fig. 5A and Fig. 5B and respective portions of the spec.) in a switch (switch, col. 2 lines 50-55) having a limited (even data buffers (of 128 bytes), col. 25 lines 45-47) primary memory (Fig. 40, DRAM 1 and respective portions of the spec.) including a number of queues (queue, Fig. 5, Fig. 5A and Fig. 5B and respective portions of the spec.) for switching data packets (flow switching, col. 2 lines 20-25) between input ports (Fig. 5, Receive Ports) and output ports (Fig. 5, Transmit Ports), and connected to a secondary memory (Fig. 40, DRAM 2

and respective portions of the spec.) also including queues (queue, Fig. 5, Fig. 5A and Fig. 5B and respective portions of the spec.), comprising the steps of:

dividing a data stream (Fig. 24) incoming on the input ports intended for respective output ports into two parts (col. 25 lines 53-65), of which the first part (even buffer addresses, col. 25 lines 49-65) contain flows (col. 2 lines 57-65) to be sent to an output port queue of the primary memory (Fig. 40, DRAM 1 and respective portions of the spec.) and the second part (odd buffer addresses, col. 25 lines 49-65) contain flows (col. 2 lines 57-65) to be sent to the secondary memory (Fig. 40, DRAM 2 and respective portions of the spec.); wherein the data (data, col. 6 lines 50-55) of the incoming data stream (Fig. 24) is identified as belonging to flow groups (flow, col. 2 lines 24-39), each flow group containing a number of flows (col. 2 lines 57-65); and wherein a number of flow groups are assigned to each queue (queue, Fig. 5, Fig. 5A and Fig. 5B and respective portions of the spec.) of the primary memory (Fig. 40, DRAM 1 and respective portions of the spec.) and the secondary memory (Fig. 40, DRAM 2 and respective portions of the spec.), but does not explicitly teach of the secondary memory being larger than the primary memory. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have made the secondary memory larger than the primary memory because it is obvious to change the size, range, proportion, and form/shape of the elements or devices in an invention. Furthermore, having a larger secondary memory would increase the useful bandwidth of the RAMBUS® memory as suggested by Robins et al.

Referring to claim 9, Robins et al. discloses the method according to claim 1, wherein each data packet of the incoming data stream is assigned a hash value based on constant flow information and the flow groups are formed by means of the hash value (col. 2 lines 57-65, Fig. 4 and Fig. 6 and respective portions of the spec.).

Referring to claim 10, Robins et al. discloses the method according to claim 9, wherein the division of the data stream is performed such that a number of flow groups are selected to be sent to said queues of the primary memory in the first part, and the other flow groups are sent to the secondary memory in the second part in order to adapt the first part of the data stream to the current capacity of the output port (col. 25 lines 26-38).

Referring to claim 11, Robins et al. discloses the method of claim 1 wherein the data packets of the incoming data stream have a priority value and are identified to priority groups and the flow groups are formed by means of the priority (priority, col. 7 line 39-col. 8 line 7).

Referring to claim 12, Robins et al. discloses the method according to claim 1, wherein the data packets of the incoming data stream have a priority value and are assigned a hash value and the flow groups are formed by means of priority value and the hash value, each flow group having a certain combination of priority value and hash value (priority, col. 7 line 39-col. 8 line 7).

Referring to claim 13, Robins et al. discloses the method according to claim 11 or 12, wherein a number of queues contain flow groups having the same priority value (priority, col. 7 line 39-col. 8 line 7).

Referring to claim 19, Robins et al. discloses the method according to claim 1, wherein a scheduler selects packets from the primary and the secondary memory (Fig. 40, DRAM CONTROLLER and respective portions of the spec.).

Referring to claim 20, Robins et al. discloses the method according to claim 19, wherein the scheduler first selects packets from the primary memory, then, if the primary memory is empty, the scheduler selects packets from the secondary memory (col. 25 lines 49-65).

Referring to claim 21, Robins et al. discloses the method according to claim 19, wherein the data packets have a priority value, and the scheduler selects packets on a strict priority basis from the primary memory and the secondary memory, and if packets have the same priority, packets from the primary memory are selected first (priority, col. 7 line 39-col. 8 line 7).

Referring to claim 22, Robins et al. discloses the method according to claim 21, wherein the output ports share the same bandwidth from the secondary memory, and, when the whole bandwidth is occupied by the other output ports, as seen from one output port, then, the scheduler is able to read from the primary memory, even though the priority order may be broken (priority, col. 7 line 39-col. 8 line 7).

Referring to claim 27, Robins et al. discloses an arrangement of managing packet (packet, col. 2 lines 25-30) queues (queue, Fig. 5, Fig. 5A and Fig. 5B and respective portions of the spec.) in a switch (switch, col. 2 lines 50-55) having a limited (even data buffers (of 128 bytes), col. 25 lines 45-47) primary memory (Fig. 40, DRAM 1 and respective portions of the spec.) including a number of queues (queue, Fig. 5, Fig.

5A and Fig. 5B and respective portions of the spec.) for switching (flow switching, col. 2 lines 20-25) data packets between input ports (Fig. 5, Receive Ports) and output ports (Fig. 5, Transmit Ports), and connected to a secondary memory (Fig. 40, DRAM 2 and respective portions of the spec.) also including a number of queues (queue, Fig. 5, Fig. 5A and Fig. 5B and respective portions of the spec.), comprising:

means for dividing a data stream (Fig. 24) incoming on the input ports intended for respective output ports into two parts (col. 25 lines 53-65), of which the first part (even buffer addresses, col. 25 lines 49-65) contain flows (col. 2 lines 57-65) to be sent to an output port (Fig. 5, Transmit Ports) queue (queue, Fig. 5, Fig. 5A and Fig. 5B and respective portions of the spec.) of the primary memory (Fig. 40, DRAM 1 and respective portions of the spec.) and the second part (odd buffer addresses, col. 25 lines 49-65) contain flows (col. 2 lines 57-65) to be sent to the secondary memory (Fig. 40, DRAM 2 and respective portions of the spec.); wherein the data (data, col. 6 lines 50-55) of the incoming data stream (Fig. 24) is identified as belonging to flow groups (flow, col. 2 lines 24-39), each flow group containing a number of flows (col. 2 lines 57-65); and wherein a number of flow groups are assigned to each queue (queue, Fig. 5, Fig. 5A and Fig. 5B and respective portions of the spec.) of the primary memory (Fig. 40, DRAM 1 and respective portions of the spec.) and the secondary memory (Fig. 40, DRAM 2 and respective portions of the spec.), but does not explicitly teach of the secondary memory being larger than the primary memory. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have made the secondary memory larger than the primary memory because it is

obvious to change the size, range, proportion, and form/shape of the elements or devices in an invention. Furthermore, having a larger secondary memory would increase the useful bandwidth of the RAMBUS® memory as suggested by Robins et al.

Referring to claim 35, Robins et al. discloses the arrangement according to claim 27, wherein each data packet of the incoming data stream is assigned a hash value based on constant flow information and the flow groups are formed by means of the hash value (col. 2 lines 57-65, Fig. 4 and Fig. 6 and respective portions of the spec.).

Referring to claim 36, Robins et al. discloses the arrangement according to claim 35, wherein the division of the data stream is performed such that a number of flow groups are selected to be sent to said queues of the primary memory in the first part, and the other flow groups are sent to the secondary memory in the second part in order to adapt the first part of the data stream to the current capacity of the output port (col. 25 lines 26-38).

Referring to claim 37, Robins et al. discloses the arrangement according to claim 27, wherein the data packets of the incoming data stream have a priority value and are identified as belonging to priority groups and the flow groups are formed by means of the priority (priority, col. 7 line 39-col. 8 line 7).

Referring to claim 38, Robins et al. discloses the arrangement according to claim 27, wherein the data packets of the incoming data stream have a priority value and are assigned a hash value and the flow groups are formed by means of the priority value and the hash value, each flow group having a certain combination of priority value and hash value (priority, col. 7 line 39-col. 8 line 7).

Referring to claim 39, Robins et al. discloses the arrangement according to claim 37 or 38, wherein a number of queues contain flow groups having the same priority value (priority, col. 7 line 39-col. 8 line 7).

Referring to claim 45, Robins et al. discloses the arrangement according to claim 17, wherein a scheduler selects packets from the primary memory and the secondary memory (Fig. 40, DRAM CONTROLLER and respective portions of the spec.).

Referring to claim 46, Robins et al. discloses the arrangement according to claim 45, wherein the scheduler first selects from the primary memory, then, if the primary memory is empty, the scheduler selects from the secondary memory (col. 25 lines 49-65).

Referring to claim 47, Robins et al. discloses the arrangement according to claim 41, wherein the data packets have a priority value, and the scheduler selects packets on a strict priority basis from the primary memory and the secondary memory, and if packets have the same priority, packets from the primary memory are selected first (priority, col. 7 line 39-col. 8 line 7).

Referring to claim 48, Robins et al. discloses the arrangement according to claim 47, wherein the output ports share the same bandwidth from the secondary memory, and, when the whole bandwidth is occupied by the other output ports, as seen from one output port, then, the scheduler is able to read from the primary memory, even though the priority order may be broken (priority, col. 7 line 39-col. 8 line 7).

Allowable Subject Matter

4. Claims 2-4, 6-8, 14, 16-18, 23-26, 28-30, 32-34, 40, 42-44 and 49-52 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

5. Applicant's arguments with respect to claims 1, 9-13, 19-22, 27, 35-39 and 45-48 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

6. **Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(703) 305-3988, (for formal communications intended for entry)

Or:

(703) 305-3988 (for informal or draft communications, please label "PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA. 22202, Sixth Floor (Receptionist).

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jamal A. Fox whose telephone number is (703) 305-5741. The examiner can normally be reached on Monday-Friday 6:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin can be reached on (703) 305-4366. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9315 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-0377.

J.A.F.

Jamal A. Fox

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